

## EXAMINATION OF THE CRANIAL NERVES

### II - Optic

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**A. Visual acuity:** test each eye separately - Snellen's charts or informally using any available text. (Do this before fundoscopy - the patient may be dazzled)

***Test environment***

- Check whether the patient has glasses.
- Explain the test procedure.

***Test procedure***

1. Use handheld text or 6 meter wall chart.
2. Ask patient to cover one eye (not close it) and read letters line by line from the top. Note the last line read with one or no errors.

***Test interpretation***

- This is essentially a test of macular vision.
- The numbers of the lines indicate the distance that a normally-sighted person would be able to see it. Visual acuity is expressed as the distance the letters are read/the distance at which they should be read. The numbers under each line of the chart indicates the distance at which they should be read. 6/12 means that at 6m the patient can just read the line that should just be visible at 12m.
- Normal acuity is 6/6 or < 6/6. Less than that indicates visual impairment.
- More severe visual impairment is expressed as
  - 'counts fingers'
  - 'perceives movement'
  - 'perceives light'

❖ ***Fast exam -omit***

## SNELLEN'S CHART (NOT TO SCALE)

A

60

N D

36

H C U

24

A O N T

18

D H L E N

12

C E A P H O

9

T L C N O H D

6

N E H D L T O A

5

The chart is viewed at 6m

The patient covers one eye and reads down the chart.

The smallest visible line and the number under it is noted.

Visual acuity is expressed as 6/(number under line).

If they can't read the top line move them to 3m. If they can just read it their acuity is expressed as 3/60

## **B. Visual fields (peripheral):**

### ***Test environment***

- Check the patient can see out of both eyes.

### ***Test procedure***

Test the eyes separately asking the patient to cover each eye in turn. There are two equally acceptable methods. Both require careful explanation of what the patients is expected to do:

#### ***By confrontation - the standard method.***

1. Get your head at the patient's eye-level
2. Cover your own eye opposite to the patient's covered eye.
3. Ask the patient to fix their gaze between your eyes.
4. Ask them to say 'yes' when the pin-head seen out of the corner of their eyes become red.
5. Holding a 'neurological' pin with a red head midway between your heads slowly bring it in from your extreme upper and lower nasal and temporal fields.
6. Check when *you* can just see the pin-head turn red.
7. Check when *they* say they can see the pin-head turn red.
8. This allows you to map their visual fields for colour onto yours and detect any abnormality.

(NB Make sure they can actually fix on the pin-head - don't hold it too close!)

#### ***By wiggling (the quick method)***

1. Keep both your eyes open (the patient covers one eye).
2. Ask the patient to fix their gaze between your eyes.
3. Ask them to say 'yes' when they can just see your fingers wiggling out of the corner of their eyes.
4. Wiggle your fingers behind the patient's head and bring them slowly round into their extreme upper and lower nasal and temporal fields until they perceive movement. Do the same for each quadrant of each eye.

#### **❖ *Fast exam - Screening.***

1. Both you and patient's eyes open.
2. Wiggle your fingers in patient's upper temporal fields.
3. Ask whether they see wiggling in their right, left or both eyes.
4. Only test nasal fields if a defect appears.

(This will also test *sensory inattention*. The patient has no field loss but always indicates movement on one side when both fingers are wiggled. This indicates a parietal lobe disorder.)

### ***Test interpretation***

- The majority of field defects are quite gross. The patient will not see anything until the object crosses into the normal field almost directly in front of the eye.
- There are three major defects:
  1. Homonymous hemianopia – the patient is unable to see objects in either the right or the left visual fields. The lesion is in the opposite optic tract or optic radiation
  2. Bitemporal hemianopia – the patient is unable to see objects in either temporal field. The lesion is in the opposite optic nerve.
  3. Scotomas – the patient has a roughly circular area of blindness in either visual field. The lesion is in the same retina. If this is suspected the examination methods above need to be modified as follows:

### **Visual fields (Central):**

1. Get your head at the patient's eye-level
2. Cover your own eye opposite to the patient's covered eye.
3. Ask the patient to fix their gaze between your eyes.
4. Tell them you will move the pinhead or other object across their field of vision. Ask them to say 'yes' if the pin-head disappears.
5. Holding a 'neurological' pin midway between your heads slowly bring it across their field of vision.
6. If you are using a red pin it is helpful to ask if the colour changes to something less bright.

(NB Make sure they could actually see on the pin-head – don't hold it too close!)